



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,359	12/30/2000	Gary Cao	042390P9473	8440
59796	7590	06/05/2008	EXAMINER	
INTEL CORPORATION			RAO, SHRINIVAS H	
c/o INTELLEVATE, LLC				
P.O. BOX 52050			ART UNIT	PAPER NUMBER
MINNEAPOLIS, MN 55402			2814	
			MAIL DATE	DELIVERY MODE
			06/05/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/752,359	<b>Applicant(s)</b> CAO ET AL.
	<b>Examiner</b> STEVEN H. RAO	<b>Art Unit</b> 2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(o).

#### Status

- 1) Responsive to communication(s) filed on 05 April 2008.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No. (s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_  
 5) Notice of Informal Patent Application  
 6) Other \_\_\_\_\_

***Response to Amendment***

Applicants' amendment filed on November 09, 2007 along with the petition to revive has been entered and forwarded to the Examiner on April 05, 2008.

Therefore Claim 1 as amended by the amendment, claims 2 to 11 as previously recited are currently pending in the Application.

Claims 12 to 16 have been cancelled.

**Claim Rejections - 35 USC Section 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satya et al. ( U.S. Patent No. 6,528,818, herein after Satya) and Browning et al. ( U.S. Patent No. 5,580,829 herein after Browning), both previously applied and further in view of Stearns et al. ( U.S. Patent No. 5,715,385, herein after Stearns).

Art Unit: 2814

With respect to claim 1 Satya describes a structure disposed in a space in a scribe line comprising: a first set of features , ( Satya abstract line 2-4, Satya col. 37 lines 28 to 30) said first set of features being a subset of product features, ( Satya figure 27, etc.) and, a second set of features adjacent to said first set of features, ( Satya abstract lines 6-8, Satya col. 37 lines 28 to 30), said second set of features being unique ( Satya figure 27, etc and Satya abstract lines 6-8, Satya col. 37 lines 28 to 30, similar to applicants' " pattern factor" defined in Applicants' specification as page 9 lines 1-2 see also Applicants' specification page 8 lines 19-end, etc.).

The remaining limitations of claim 1 are :

second set of features created by geometric transformation of said product features, including rotating, space scaling and line width scaling.

Satya does not specifically describe limitation second set of features created by geometric transformation of said product features, including rotating, space scaling and line width scaling.

Satya does not specifically mention the second set of features created by geometric transformation of said product features, including rotating, space scaling and linewidth scaling.

However Stearns in col. 2 line 30 to col. 6 line 13 describes second set of features created by geometric transformation of said product features, including rotating, space

scaling and line width scaling to perform the method at higher speeds reliability and an easier simpler less expensive method.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Stearns' second set of features created by geometric transformation of said product features, including rotating, space scaling and line width scaling in Satya's device/s, the motivation for the afore mentioned combination is to perform the method at higher speeds reliability and an easier simpler less expensive method ( Stearns' col. 2 lines 35-38 and lines 45-47).

The last remaining clause of claim 1 is " wherein said second set of features occupies a smaller portion of said space than said first set of features".

Satya and Stearns do not specifically mention " wherein said second set of features occupies a smaller portion of said space than said first set of features".

However Browning in figure 4 and col. 4 lines 40-52 describes the second set of features spread across a smaller space than the first set ( i.e. first set is larger oversize by about 10% to reduce the amount of extra metallic material deposited on dice such that bowing is eliminated and human error is virtually eliminated by creating the second mask key. ( Browning col.2 lines 35-40). It is noted that Applicants' amending the claim 1 form "said second set of features occupying a smaller area than said first set of features "to said second set of features (occupying) spread across a smaller space (area) than said first set of features" is not sufficient to distinguish over the

applied art of record for reasons set forth above and explained to Attorney Chen in two interviews.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Browning's second set occupying a smaller area than said first set, in Satya's device to reduce the amount of extra metallic material deposited on dice such that bowing is eliminated and human error is virtually eliminated by creating the second mask key. ( Browning co1.2 lines 35-40).

It is noted that the presently newly added recitation "smaller area of said chip than said first set, said second set being distinguishable from other similar structures in the vicinity to provide uniqueness to said test structure " ( emphasis supplied ) is an inherent property of any area that are different in size i.e. occupying smaller area of the chip ) will always constitute the area being distinguishable from other similar structures in the vicinity to provide uniqueness to said test structure e.g. first, second sets.

With respect to claim 2 Satya describes the structure of claim 1 wherein critical dimension (CD) is measured on said first set of features. ( Stay figure 2, col. 8 lines 1 5-22).

With respect to claim 3 Satya describes the structure of claim 1 wherein said first set of features and said second set of features differ in spaces between features. (Stay a figure 4D # 216 and 214)

With respect to claim 4 describes the structure of claim 1•wherein said first set of features and said second set of features differ in line widths of features. ( Stay a figure 4 D).

With respect to claim 5 describes the structure of claim 1 wherein said first set of features and said second set of features have the same pitch for features. ( Satya figure 4C).

B. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satya et al. ( U.S. Patent No. 6,528,818, herein after Satya) ,Browning et al. ( U.S. Patent No. 5,580,829 herein after Browning) and in view of Stearns et al. ( U.S. Patent No. 5,715,385, herein after Stearns) as applied to claims 1-5 above and further in view of Gallarada et al ( U.S. Patent No. 6,539,106 herein after Gallarada).

With respect to claim 6 Satya and Browning describe the structure of claim 1.

However Stay a, Browning and Stearns do not describe wherein said first set of features comprises a first array of holes.

However, Gallarada in figure 4, col. 6 lines 36 to 48 describes wherein said first set of features comprises a first array of holes to identify defects of electrical significance, such as missing or incompletely formed contact holes and provide

methods for inspection by matching of features between the images.

Therefore, it would have been obvious to one of ordinary skill in the art at the time for the invention to include Gallarada's teachings Of first set of features comprises a first array of holes, in Satya' and Browning's first/second set of features.

The motivation to make the above substitution is to identify defects of electrical significance, such as missing or incompletely formed contact holes and provide methods for inspection by matching of features between the images. ( Gallarada col. 6 lines 40-47).

With respect to claim 7 describes the structure of claim 6 wherein said first array of holes comprises a 5 by-5 square array of holes. ( Gallarda figure 5).

With respect to claim 8 describes the structure of claim 6 wherein said second set of features comprises a second array of holes. ( Gallarda figure 5).

With respect to claim 9 describes the structure of claim 8 wherein said second array of holes differs from said first array of holes in size of array. ( Gallarda figure 5 # 536 compared with other structures 526-534).

With respect to claim 10 describes the structure of claim 8 wherein said second array of holes differs from said first array of holes in space between holes. ( Gallarda figures 18 A and E)

With respect to claim 11 describes the structure of claim 8 wherein said second array of holes differs from said first array of holes in line widths of holes.. ( Staya figure 4D).

***Response to Arguments***

Applicant's arguments filed April /05/ 2008 have been fully considered but they are not persuasive for the following reasons :

In response to Applicants' piecemeal analysis of the references, it has been held that one cannot show nonobviousness by attacking references individually where, as here, the rejections are based on combinations of references.

In re Keller, 208 USPQ 871 ( CCPA 1981).

Applicants' piece meal analysis that the primary reference Satya allegedly does not disclose the second set of features is created by geometric transformation is not persuasive because as stated in the rejections previously including above the secondary reference Stearns teaches/, discloses the second set of features is created by geometric transformation and the other applied secondary Browning reference teaches/discloses the second set of features occupying a smaller area of said chip than the first set.

Applicants' and their Attorney George Chen are clearly mistaken in arguing that Browning does not teach a second set (404) of features that occupies a smaller portion of an area occupied by the structure than a first set (403) of features.

It is well known that the first set of features that are 10 % oversize have to occupy a larger area.

Applicants' and Attorney George Chen are respectfully requested to show evidence of any instance wherein 10 % bigger (oversized) feature will not occupy a larger area in the context of Applicants' specification as originally filed.

Further Applicants' and their attorney state :

"In the opinion of the Examiner, Stearns et al. teaches performing the operations of scaling transformation, or rotation on an entire image or on any part thereof. However, Stearns et al. only teaches an affine transformation which means that the transformation always preserves the parallelism of lines in the input and output images. See col. 1 lines 30-37."

Stearns Col.1 lines 30-37 describes prior art

tions. An affine transformation (hereinafter referred to inter-<sup>30</sup>  
changably as "transformation", and "affine image  
transformation") is any transformation which preserves the  
parallelism of lines in the input and output images. Such  
transformations include the operations of scaling in either or  
both dimensions, translation (moving), or rotation. These  
operations may be performed on an entire image or on any  
part thereof.<sup>31</sup>

Therefore it is clear that by Applicants' and their Attorneys by attempting to limit a patent's (Stearns') teachings to "Stearns et al. only teaches an affine transformation which means that the transformation always preserves the parallelism of lines in the input and output images. See col. 1 lines 30-37." are either unable to understand the

difference between a what a patent teaches as background or prior art And the improvements over this background or prior art described in the patent

Therefore all of Applicants' arguments are not persuasive and the combination of the applied references namely Satya et al., Browning et al. and Stearns et al will produce the structure presently claimed by Applicants' in claims 1 and 2-5.

Applicants' also separately argue that because claims 2-5 depend upon allegedly allowable claim 1, they are also allowable.

However as shown above claim 1 is not allowable, therefore dependent claims 2-5 are also not allowable.

Applicants' contention that for reasons set out above also apply to claims 6 to 11 are also found to be not persuasive after extensive review and analysis hold true for the same arguments here also ( claims 6 to 11) and is incorporated here by reference for the sake of brevity and compact prosecution.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEVEN H. RAO whose telephone number is (571)272-1718. The examiner can normally be reached on 8.30-5.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1714. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2814

/Steven H Rao/  
Examiner, Art Unit 2814

/Howard Weiss/  
Primary Examiner, Art Unit 2814